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Briquilimab, an Anti-Human CD117 Antibody, Effectively Treats Epicutaneous Allergen- Induced Atopic Dermatitis in Mouse Model Expressing Chimeric Human/Mouse CD117

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Disclosure of Conflict of Interest

The authors have no conflict of interest to disclose.

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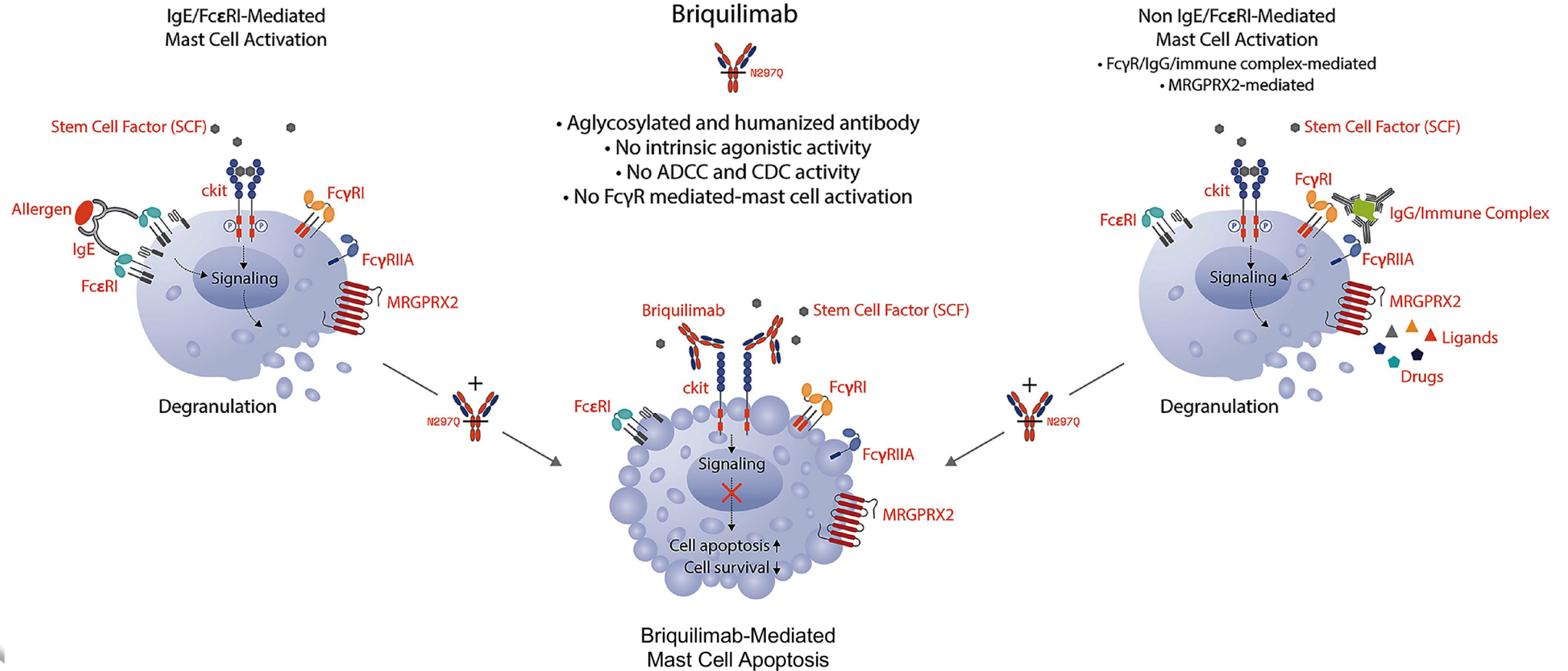
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Takeaways

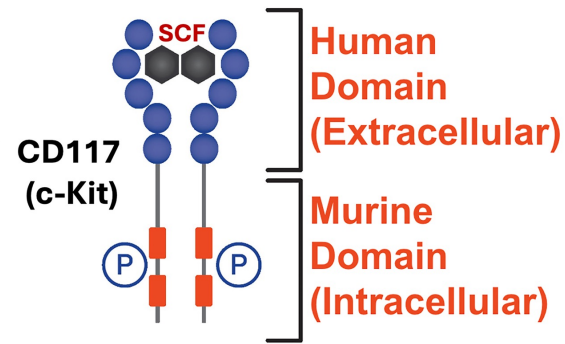
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Acknowledgements

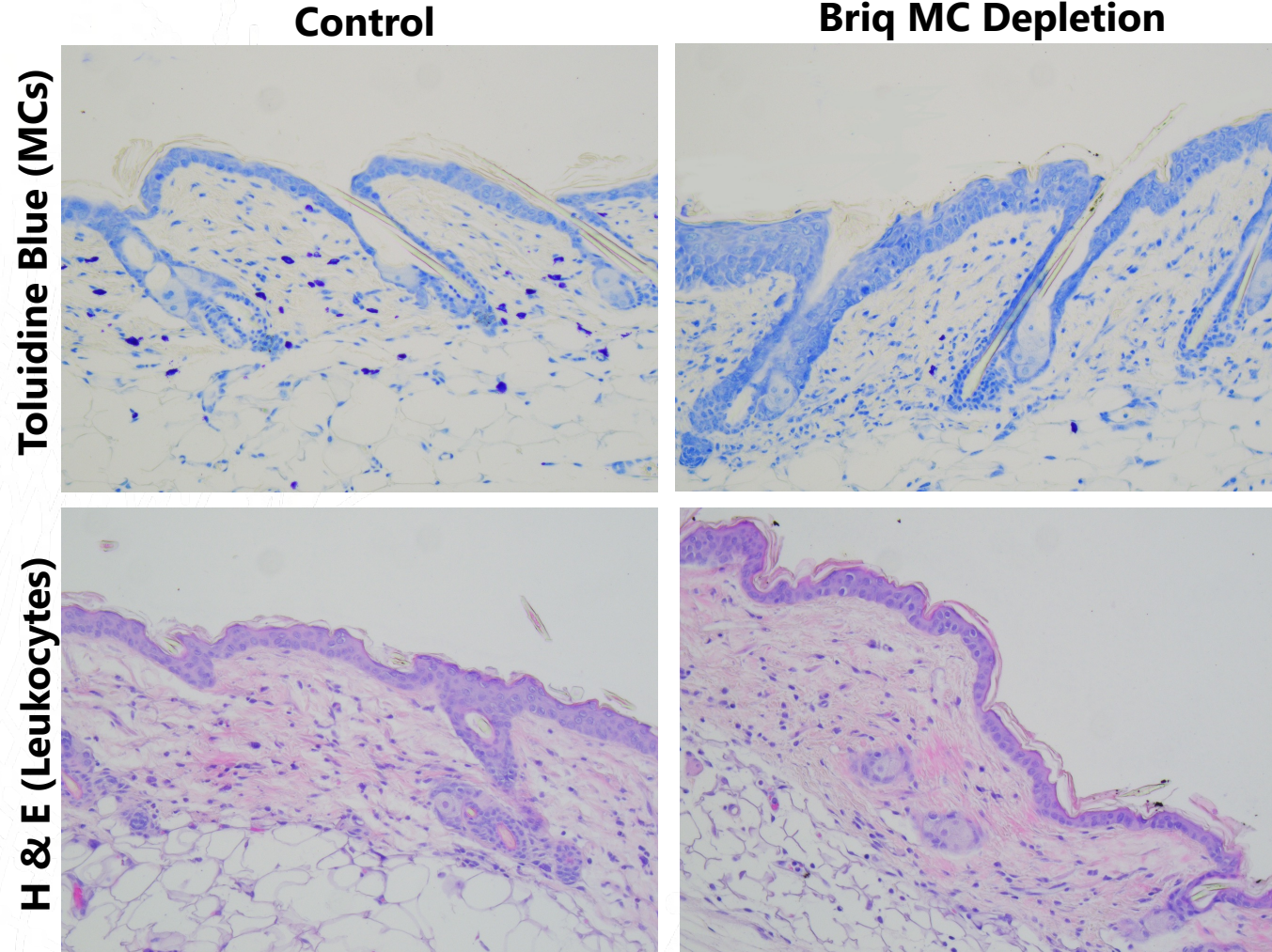
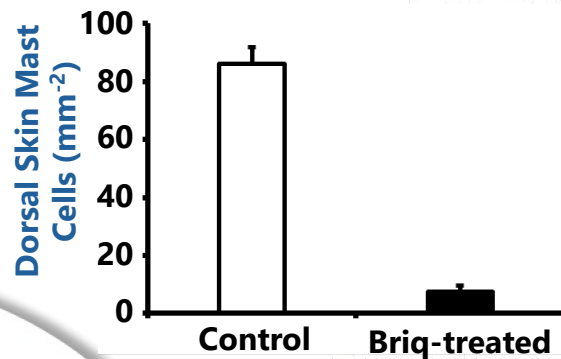
Briquilimab (Briq), an Anti-human CD117 mAb, Potently Regulates Mast Cell (MC) Survival and Functions through Inhibiting SCF-CD117 Signaling.



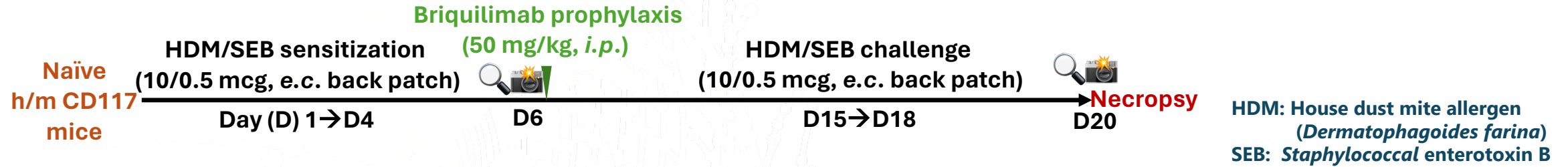
h/mCD117 mice, expressing chimeric functional human and murine CD117, provide a robust tool for evaluating briquilimab-mediated mast cell (MC) depletion and its therapeutic effect on MC-related diseases including atopic dermatitis.



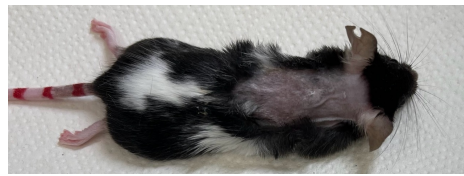
Significant MC depletion observed 2 weeks post-Briq treatment (50 mg/kg, single dose)



Prophylactic Treatment Model Using h/mCD117 Mice to Test Briquilimab's Proof-of-Concept Efficacy for Atopic Dermatitis.



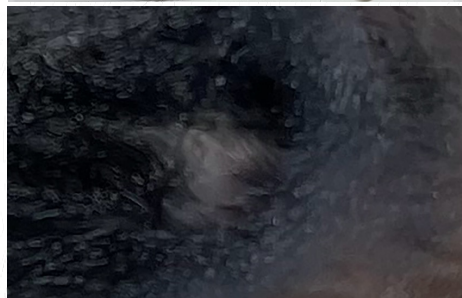
Allergen-sensitized h/mCD117 + **Placebo** + Allergen e.c. Challenge



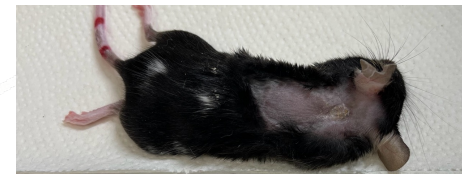
2 W



Dorsal Skin



Allergen-sensitized h/mCD117 + **Briq** + Allergen e.c. Challenge



2 W

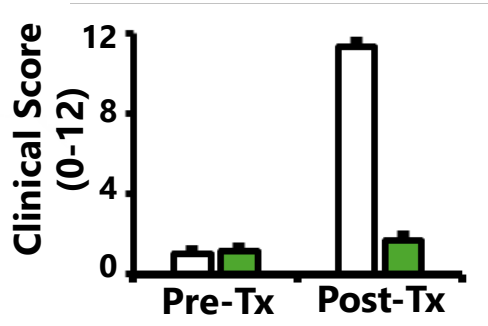


Dorsal Skin

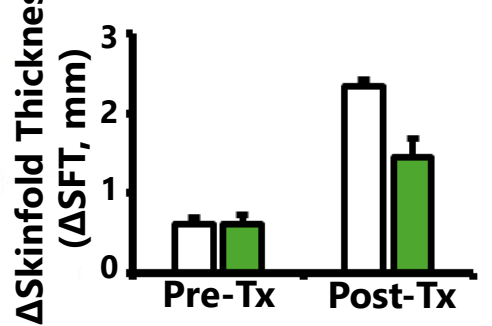


Two weeks after one-time Briq prophylactic treatment, epicutaneous allergen-sensitized h/mCD117 mice exhibited significantly reduced dorsal skin MC number, symptoms, and dermal inflammation following epicutaneous allergen challenge.

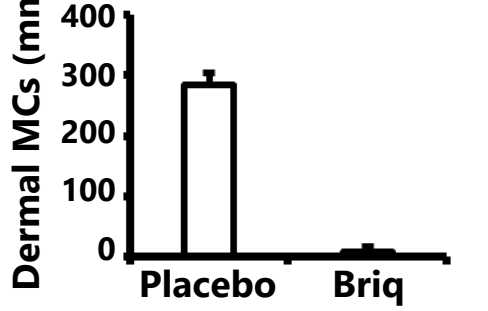
Symptom Severity



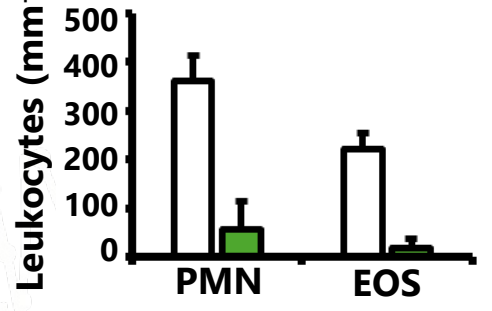
Dorsal Skin Thickness



Dorsal Skin MCs



Dermal Inflammation



□ Placebo ■ Briq Prophylaxis

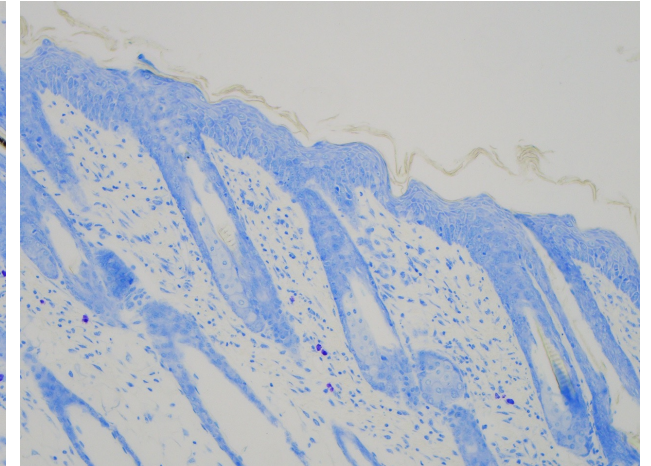
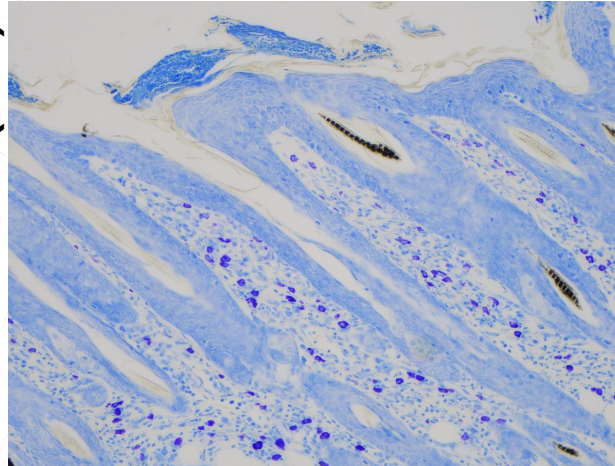
Pre-Tx, before treatment
Post-Tx, 2 weeks after treatment

PMN, neutrophils; EOS, eosinophils

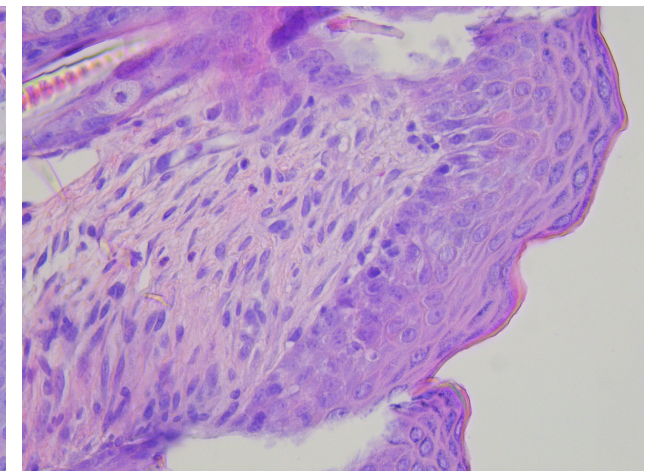
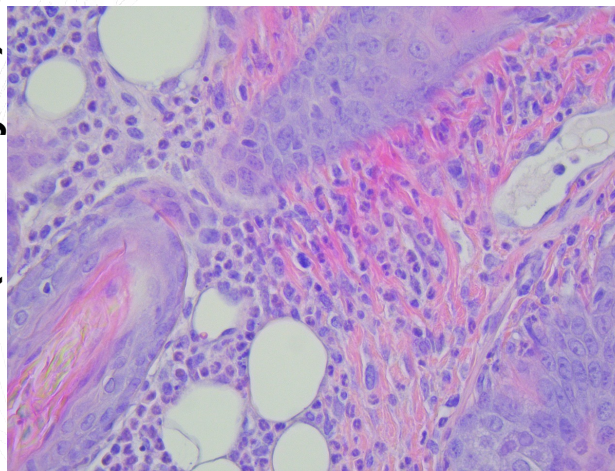
Placebo

Briq Prophylaxis

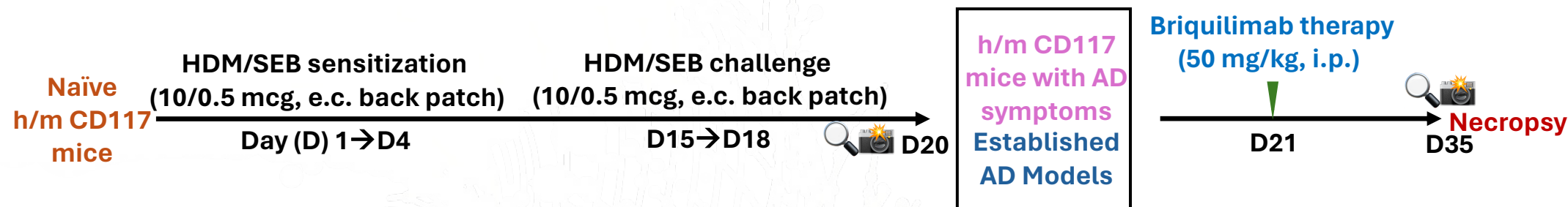
Toluidine Blue (MCs)



H & E (Leukocytes)

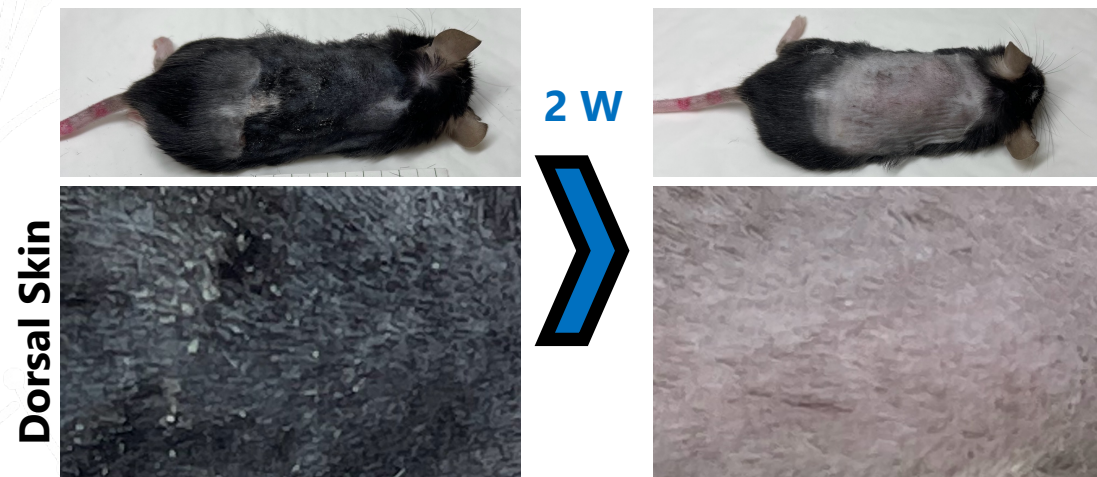
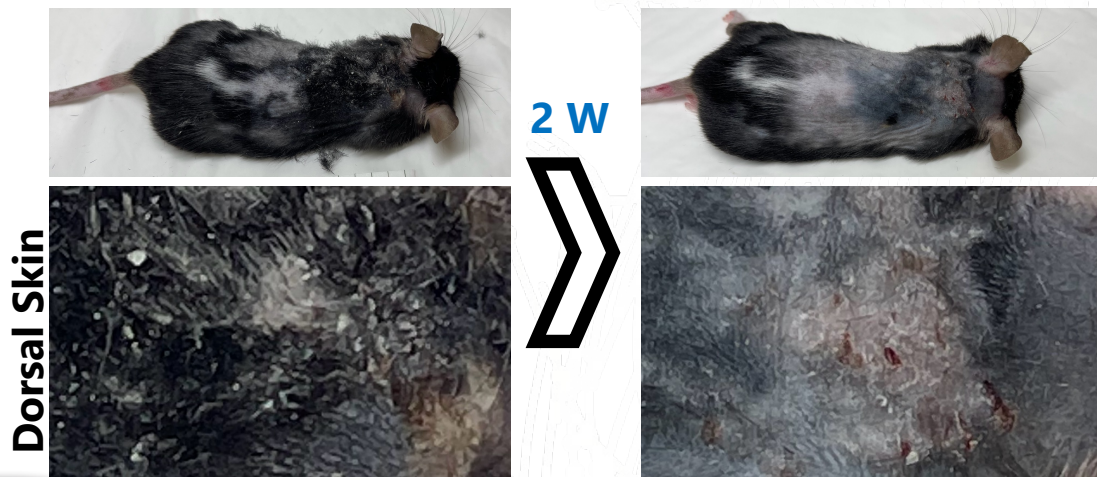


4.1 Therapeutic Treatment Model Using h/mCD117 Mice to Test Briquilimab's Proof-of-Concept Efficacy for Atopic Dermatitis

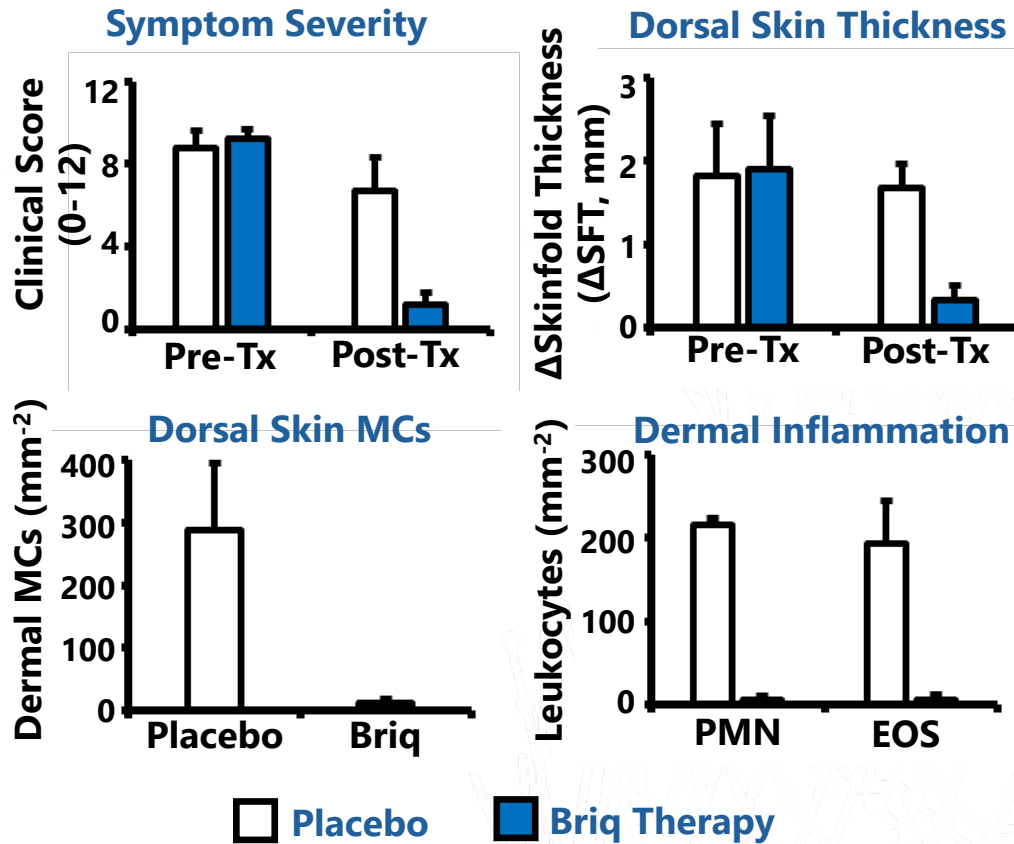


Established AD Model + **Placebo**

Established AD Model + **Briq**



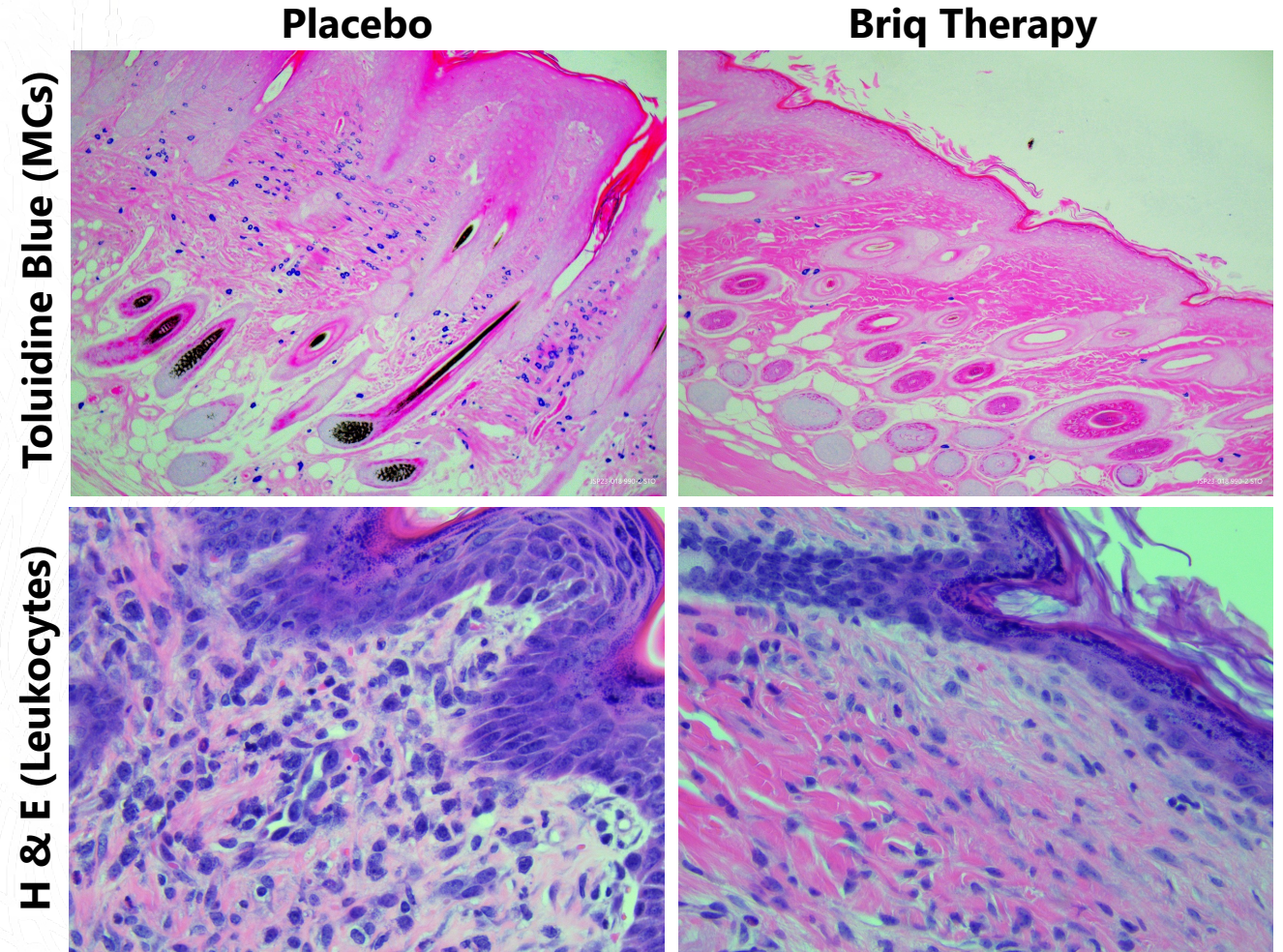
Two weeks after one-time Briq therapeutic treatment, established atopic dermatitis models in h/mCD117 mice exhibited significantly reduced dorsal skin MCs, symptoms, and dermal inflammation.



Pre-Tx, before treatment

Post-Tx, 2 weeks after treatment

PMN, neutrophils; EOS, eosinophils



CONCLUSIONS

- **A single dose of briquilimab can deplete mast cells (MCs) in healthy h/mCD117 mice or atopic dermatitis model elicited in h/mCD117 mice.**
- **Briquilimab's ability to deplete MCs contributes to its prophylactic and therapeutic effect on atopic dermatitis model induced in h/mCD117 mice.**

TAKEAWAYS

- **Mast cells (MCs) play a critical role in the pathogenesis of atopic dermatitis.**
- **Briquilimab can potentially target MCs in the treatment for atopic dermatitis.**
- **JASPER is actively enrolling participants in two phase 1b/2a trials evaluating briquilimab in patients with chronic spontaneous urticaria (NCT06162728) and chronic inducible urticaria (NCT06353971), respectively.**

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Meet us at Jasper's booth.

Copies of the abstract are available upon request



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